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Ocean Climate Restoration Using Offshore Carbon Capture and Storage (CCS)

E04

Summary

Target Emission Source: **Power Generation**

Emission Reduction Strategy: **Carbon Capture and Storage**

Project Type: **Research & Development**

Entry TRL: **4**

Target TRL: **6**

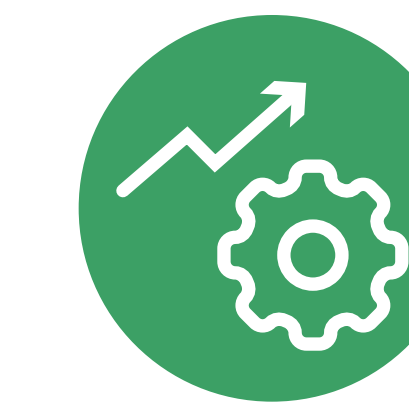
Field Trial Required: **No**



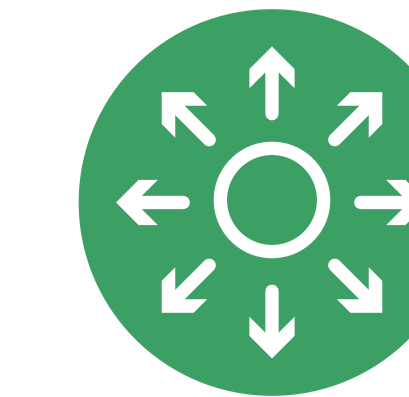
The Project

Planetary Technologies investigated the ability to use a novel electrochemical process using alkalinity generated from mine waste to capture carbon from the exhaust of offshore production facilities. The resulting bicarbonate is stored within seawater, helping to reduce ocean acidification. The project determined that the mild alkalinity proposed would not be optimal for a space constrained offshore oil and gas platform, although direct ocean air capture has significant potential.

Benefits



Accelerated development of patent-pending carbon capture technology



Identified that the carbon capture technology is applicable to other industries, such as mining – which can help Canada meet its net zero goals



Increased capacity and expertise in carbon capture

Opportunities & Next Steps

Build a second-generation electrochemical cell based on results of this project

Scale up metallurgical work from bench-scale tests to site specific pilots over the next 12 months

Determine carbon capture rates by scaling up direct air ocean capture experiments that test ocean alkalinity enhancement

Project was supported from Natural Resources Canada's Emissions Reduction Fund, Offshore RD&D program, which is managed and administered by Energy Research & Innovation Newfoundland & Labrador



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